water for life

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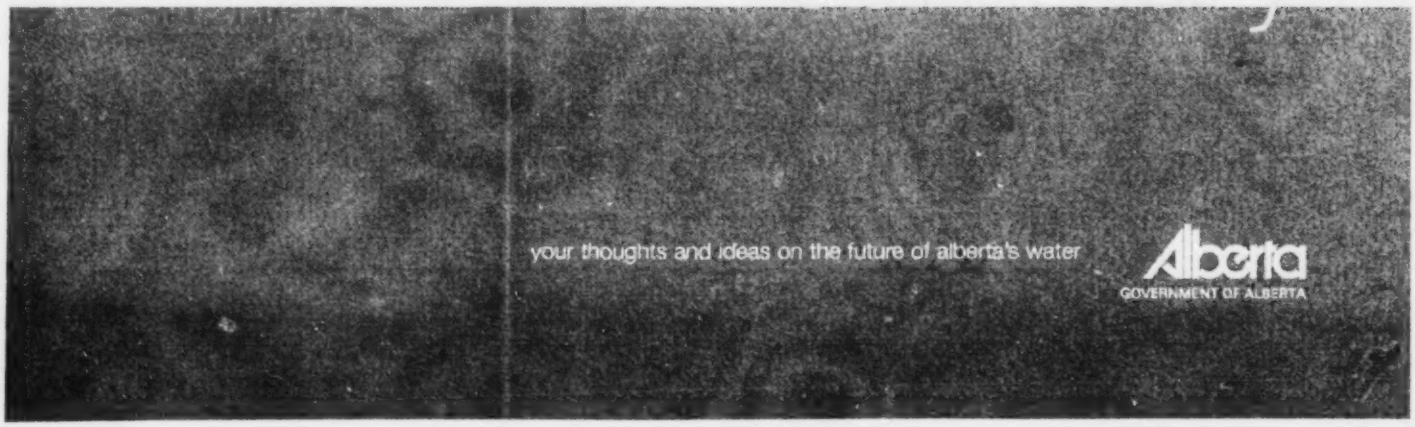

water for life

summary of consultation results

to
The Honourable Lorne Taylor
Minister of Environment
Government of Alberta

prepared by
Equus Consulting Group Inc.
Edmonton, Alberta

May 10, 2002

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Equus Consulting Group

May 10, 2002

Honourable Lorne Taylor
Minister of Environment
Government of Alberta
Room 423 Legislature Building
10800 - 97 Avenue
Edmonton, AB T5K 2B6

Dear Minister Taylor,

I am pleased to submit the attached report, which summarizes the results of the efforts made in March and April 2002 to gain input from Albertans on the topic of a provincial water strategy. Albertans responded enthusiastically to the opportunity to provide input and have made it clear that the questions you have raised are both timely and important.

Equus Consulting Group Inc. facilitated three approaches to public involvement on your behalf: 15 community workshops, the analysis of more than 2,100 completed workbooks, and a random telephone survey of 1,000 Albertans. All responses were submitted to Equus and have been documented in three sub-reports, which will be forwarded to you under separate cover. The sub-reports include all comments received in the workbooks and notes that describe comments made at community workshops.

The ideas, advice and perceptions that Albertans submitted during the process fill hundreds of pages. This summary report represents my effort to provide you, and all interested Albertans, with an insight into the views and expectations of the many Albertans who made the significant effort to participate.

I am confident these results are predictive. The random telephone survey of Albertans provided an independent and statistical comparison with the results of the workbooks. The two sets of results suggest similar views and expectations.

Thank you for the opportunity to be of service on this important matter.

Sincerely,

Bill McMillan
Partner

This summary describes the major findings of a six week consultation with Albertans regarding a provincial water strategy. Respondents felt the issues described herein are important and urged the provincial government to take action to prepare the province for future water challenges.

The areas Albertans feel are most important are: pollution, supply of safe drinking water, improved knowledge about water conservation and protection of the aquatic environment. Most respondents believe that water will become increasingly scarce in the province and that water allocation will therefore become an important issue.

introduction

The Equus Consulting Group Inc. (Equus) was asked by Alberta Environment to conduct a public consultation process that would raise public awareness and stimulate discussion about the need for a provincial water strategy. The process was intended to gather information about (a) public perceptions of the current situation, (b) expectations for the future, and (c) preferences regarding choices that may become necessary in the future.

description of public consultation components

There were four major components to the consultation process: workbooks, community workshops, a random telephone survey and a web site. The consultation process began March 1 and ran until April 15, 2002.

- A questionnaire-style workbook was available to all Albertans by mail, on-line or through a community workshop. It included 48 questions asking respondents to indicate their future expectations and to weigh options for addressing possible challenges. When sent by mail or distributed at community workshops, the workbook was accompanied by an information book entitled *Facts and Information on Water in Alberta 2002*, and a brochure outlining the process through which a strategy would be developed. More than 5,000 workbooks were distributed and over 2,100 were completed and returned.
- Fifteen community workshops (see Sub-report No. 2, section a, for dates and locations) were held throughout the province, attracting approximately 1,000 Albertans. The workshops were

designed to provide Albertans with an opportunity to discuss the possible challenges and options for action described in the workbook.

- A random telephone survey of 1,000 Albertans was conducted between March 26 and April 8, 2002. The survey is statistically accurate to within 3 per cent, 19 times out of 20.
- During the consultation period, a "water for life" web site was maintained by Alberta Environment. This site attracted more than 40,000 visits. The workbook was down-loaded from this site 2,300 times.

The advice provided by Albertans throughout the consultation was gathered, analyzed and documented by Equus.[1] The advice received is the basis of this summary prepared by Equus. The complete documentation of all results may be found in three sub-reports to the consultation summary that are available from Alberta Environment:

- Sub-report No. 1 - Results from Completed Workbooks
  - section a copy of workbook
  - section b data tables
  - section c workbook comments
  - section d other submissions
- Sub-report No. 2 - Record of Community Workshop Discussions
  - section a discussions by workshop location
  - section b discussions by workbook question
- Sub-report No. 3 - Results from Random Telephone Survey
  - section a copy of questionnaire
  - section b summary report

comments about a provincial water strategy

While participants were not specifically asked to judge the merits of a water strategy, they were asked to consider the components of such a strategy. Overwhelmingly, people acknowledged that a strategy is needed because water is essential to life and there are concerns about water in Alberta. It was noted that some matters affecting water extend beyond the scope of Alberta Environment.

[1] The random telephone survey was sub-contracted to Research Innovations Inc., an expert in the field.

did opinions vary by location?

There was no evidence of differences of opinion by location. Both the workbook and telephone survey results were tested statistically. There were no significant differences in response patterns of urban and rural Albertans and also no differences in the response patterns of northern and southern Albertans. Table 1 shows that rural Albertans were more likely than urban Albertans to respond to the workbooks. This response is normal, however, and does not suggest that urban interest in a water strategy is low.

table 1

	% who live in cities	% who live in towns, villages, hamlets or rural
workbook respondents *selected themselves into process*	45	55
telephone survey respondents *randomly selected*	71	29

do we need a water strategy?

At two community workshops (Rocky Mountain House and Calgary), participants were asked if a water strategy is needed. At both meetings, the response was overwhelmingly in support of the need for a strategy. At all community workshops, participants pointed out that the "future" challenges in the workbook are "happening now." Some felt a water strategy should have been initiated earlier.

sample comments about the need for a water strategy ...

from community workshop discussions

- Some sort of strategy is important. We need to define situation and get a sense of the direction that is needed.
- We need a strategy that addresses future population growth.
- We do need a strategy–most rivers in Alberta are a disgrace.
- Government needs a comprehensive water management plan. Government needs to address changing water levels year to year, generation to generation.
- Not sure whether a new strategy is required or not; rather, I think we need enforcement of existing policy.
- Our "current" strategy of taking water out of the river as fast as we can has to be changed ...

from completed workbooks

- Add "province wide conservation strategy" [to your water challenges].
- I am not sure that a sustainable economy should be the objective of a water strategy.
- The strategy for water should include the enforcement of things that are in place now.
- Government should not be allowed, by itself, to make water decisions. These decisions are too important for one group to decide alone. It should be done as a multi-stakeholder panel of citizens, industry, agriculture and government.
- The costs of not having a strategy are incalculable.

objectives of a water strategy

Workbook respondents were asked to review the following list of objectives that might guide the water strategy:

- healthy, sustainable ecosystems (e.g. watersheds, rivers, streams, lakes, wetlands and groundwater)
- a safe, secure drinking water supply
- reliable, quality water supplies for a sustainable economy
- the knowledge necessary to make effective water management decisions.

Eighty-seven per cent (87%) of workbook respondents agreed these objectives should guide the water strategy.

sample comments about the objectives of a water strategy ...

from completed workbooks

- These are good objectives, but they should not be overridden by special economic interest groups.
- Focus on [objectives] 1,2 and 4. Less on 3.
- What is the definition of a "sustainable economy"?
- More emphasis on #3–the economy and since irrigation is a major user, list it as part of that economy.
- Does not specify who has priority, health of ecosystems or sustainable economy.
- The objectives as stated are fine. Just add an objective that considers research and development for more efficient use of water resources.
- Where is enforcement?
- I do not believe that a strategy for this resource should be limited to the four fundamental objectives identified.
- There are already strategies in place or waiting which can fulfill these objectives.

fears about what might be missed

Many participants highlighted specific fears or concerns they felt were not well described by the objectives or the challenges presented in the workbook. The most frequently mentioned were:

- loss of water to non-renewable uses (especially injection into oil wells)
- monitoring and enforcement of compliance with existing regulations
- effects on water quality and aquatic habitat resulting from recreational uses of water bodies
- development and implementation of technologies and standards that would greatly improve water use efficiency and reduce demand.

what challenges should alberta's water strategy address?

Participants in the process (telephone survey, community workshops and workbooks) were asked to consider a list of 10 suggested future challenges and to determine which, if any, merit attention. The responses indicate a strong belief that there are serious concerns about water management in Alberta and that substantial changes are required to respond to these concerns.

Of the 10 suggested challenges, the same five (in slightly different priority order) were identified by both telephone survey respondents and workbook respondents as the ones which cause the most concern (telephone survey) or that received the strongest agreement (workbook) that they are challenges for the future.

table 2: top five challenges

telephone survey respondents who were concerned or very concerned		workbook respondents who agreed or strongly agreed	
future challenge	**%**	**%**	**future challenge**
surface water and groundwater will be vulnerable to pollution and contamination	**79**	**98**	knowledge about Alberta's water systems and knowledge about how to use water wisely will become important
access to safe drinking water will become a significant issue for Albertans	**72**	**94**	industrial and agricultural growth will create greater demands for water - not always in places where water is plentiful
citizens will need to know more about water systems and wise water use	**68**	**94**	surface water and groundwater will be vulnerable to pollution and contamination
industrial and agricultural growth will increase demand for water in places where water is not always plentiful	**64**	**88**	access to safe drinking water will become a significant issue for Albertans
water will become an increasingly scarce resource in Alberta	**63**	**83**	water will become an increasingly scarce resource in Alberta

sample comments about the top five challenges ...

from community workshop discussions	from completed workbooks
knowledge about Alberta's water systems and how to use water wisely will become important	
• There probably is a lack of understanding of the scope of water management in the province. Many don't realize how water is used and stored. • Important to have proper knowledge before introducing new policies ... to ensure we have healthy, long-term sustainable water sheds ... Education on the wise use of water is very important as it becomes more valuable.	• General education of the public is lacking with a lot of misconceptions and inaccurate information. • This society takes a clean, plentiful water supply for granted. Re-education will be an uphill battle. • Education of the public is a key. • Conservation and wise use of resources must become the guiding influences.

from community workshop discussions	from completed workbooks
industrial/agricultural growth will create greater demands for water-not always where water is plentiful	
• Government should keep in mind where water is available when approving industries, rather than moving the water to the industry. • An important issue in terms of overall water use in the next 20 years. Industrial/agricultural growth in combination with population growth may become a critical factor in some areas. Conservation will become very important in places like Lethbridge and Medicine Hat. We have to try and steer some of the growth that requires water into areas where it is plentiful. • ... will also create a greater demand for efficiency. If you reduced consumption by 50% you could increase growth.	• Agricultural growth will be limited without good water supply. • Attract economic activity in areas where resources exist. • There are areas where water supply may not be what is expected/wanted, but also areas where supply is plentiful. Be careful of blanket policies. • Restrictions on water transfer (diversion) will induce growth into areas where water is plentiful and slow growth in regions where development cannot be supported by/due to inadequate water.
surface and groundwater will be vulnerable to pollution and contamination	
• Currently happening. Mortgage companies already asking for wells to be tested before granting mortgages. • Already is a problem and has been for some time.	• Biggest concern relates to Alberta's rivers and contamination from industry (especially pulp mills) and intensive livestock operations. Also agricultural chemicals are out of control. • Issues of pollution and destruction of ecosystems are not addressed to the degree that they need to be.
access to safe drinking water will become a significant issue for Albertans	
• ... The majority of people who live outside municipalities don't get their water from treatment plants. They use groundwater which may or may not be close to problematic water (feedlots, oil wells, etc.). • ... More and more people are buying bottled water rather than drinking tap water. Our groundwater is already contaminated (pesticides, etc.) Industry has an effect on our water. Effluents released into rivers also contaminate water. How safe is our drinking water? No situation in Alberta yet such as Walkerton but concern has been raised.	• Concerned about contamination of groundwater aquifers by hormones, antibiotics and other synthetic chemicals used by humans and agricultural facilities. • Not if we manage our water (i.e. no sewage/pollution in our rivers). • Wastewater management will be critical in protecting source water supplies necessary for human and environmental health. • We must ensure that the people of Alberta have a safe supply of drinking water at low cost.
water will become an increasingly scarce resource in Alberta	
• ... There's a lot we can do (no flat rates for water, incentives for using water wisely, no inefficient irrigation systems) to use water more efficiently before it actually becomes scarce. • Water will be a scarce resource due to population growth and increased agricultural and industrial use. • It is already becoming scarce. There have been demonstrated decreases in river flow of 30 to 40% between 1920 and 1999. A long-term decrease covering major river systems all over the province.	• Weather trends work in cycles and I think the issue of lack of water will resolve itself, along with management. • Who will have priority of water - people, agriculture or industry - when the water supply becomes scarce? • If water becomes a "good" it could become very scarce. • If oil companies keep pumping water underground, water will become a scarce resource.

The **telephone survey** asked respondents to indicate their level of agreement with the following statement: **The Province should prepare for the possibility of water scarcity in the province.** Ninety-one per cent **(91%) of respondents agreed or strongly agreed** with the statement.

table 3: other challenges

telephone survey respondents who were concerned or very concerned		workbook respondents who agreed or strongly agreed	
future challenge	%	%	future challenge
Abertans will have to choose between the sustainability of aquatic ecosystems and economic growth	60	62	climate change will seriously affect water flows in Alberta
climate change will seriously affect water flows in Alberta	54	61	Albertans will have to choose between the sustainability of aquatic ecosystems and economic growth
effective water management will require significant investment in infrastructure (e.g. dams) and the maintenance of that infrastructure	51	60	water availability will limit growth in Alberta
water availability will limit growth in Alberta	42	49	effective water management will require significant investment in infrastructure (e.g. dams) and the maintenance of that infrastructure
flooding will pose a threat to human safety and create potential damage and economic costs	29	39	flooding will pose a threat to human safety and create potential damage and economic costs

Respondents were moderately concerned Albertans may have to choose between the aquatic ecosystem and economic growth. This view was also expressed in several meetings. Many thought this was not an appropriate basis for policy, but some noted that it is a critical choice and we must determine what our priorities are.

Flood threat was rated lowest by both telephone survey and workbook respondents. There were mixed responses to the challenge statements identifying the need for investment in infrastructure and infrastructure maintenance, and the possibility that water availability will limit growth in Alberta.

sample comments about other challenges ...

from community workshop discussions	from completed workbooks
climate change will seriously affect water flows in Alberta	
• There's still enough uncertainty about global warming to make it difficult to say whether it's an issue or not. • It's a global issue, not just a provincial issue. • The climate is always changing; the difficulty is understanding what the effects will be. We are dealing with a lack of basic science right now.	• Declining water from glaciers will provide less source water. • I have been following climate change but find research inconclusive. No doubt it will affect water but I can't say from my reading that it is now affecting or will seriously affect flows.

from community workshop discussions	from completed workbooks
Albertans will have to choose between the sustainability of aquatic ecosystems and economic growth	
• ... Shouldn't have to choose between the two. Err on the side of caution: use precautionary principle. Think long-term. Determine effect of development in particular areas. Growth should be determined by the water flow, not the other way around. • Don't need to choose. If we don't have a healthy environment, we won't have economic growth. Choose that first, economic growth will follow.	• Why do we have to choose? Let's work to achieve both. • We should choose aquatic ecosystems over economic growth, and use the precautionary principle based on ecological principles to identify whether growth should proceed.
water availability will limit growth in Alberta	
• Agriculture and industry are at a point where they cannot expand due to a lack of groundwater. Industry and agriculture have already been limited.	• Economic growth should not be the measuring stick. • Sustainable growth is the key to developing the economy while protecting the environment.
effective water management will require significant investment in infrastructure (e.g. dams) and the maintenance of that infrastructure	
• Don't agree with investing in infrastructure. • Dams/weirs have to be in place to manage water. Need to spend money to get water to the right place at the right time and avoid waste.	• No building on flood plains–no dams are required. • Wise use does not require major investment. • Limit number of dams - if only a few people helped, huge cost not warranted.
flooding will pose a threat to human safety and create potential damage and economic costs	
• Flood plains are attractive not only to agriculture but also to residential development. Loss is often due to loss of property but it's the gamble you take when you develop in a flood plain ...	• Humans do not belong on the flood plain of rivers. • Flooding always poses a threat.

achieving safe secure drinking water

action is necessary to ensure continued safe drinking water for Albertans

Respondents to workbooks and participants in the telephone survey agreed that the safety of drinking water is a concern in Alberta. It was also identified as a serious concern of participants at community workshops.

Comments made at community workshops suggest this concern is heightened by well publicized incidents involving inadequate treatment of drinking water elsewhere in Canada. Many felt our own drinking water treatment systems could not guarantee that similar incidents would not occur here. Comments made both at the community workshops and in the workbooks suggest Albertans are not confident that small municipal systems are adequate. There is also concern that there may be an increased incidence of contamination of private water supplies (particularly groundwater).

As noted above, both telephone survey and workbook respondents feel access to safe drinking water is a concern. A majority of telephone survey respondents (79%) feel that the provincial government should share responsibility with small municipalities to ensure safe drinking water. A slightly smaller majority (68%) felt the provincial government should share responsibility to ensure that private water system users receive safe drinking water.

Workbook respondents also felt the provincial government has a shared responsibility for ensuring safe drinking water for small municipalities and private water system users. However, workbook respondents were more likely to indicate that the owner or the municipality had the responsibility. The workbook responses are shown below:

table 4

who should be responsible, for private water systems, to:	owner or municipality	owner or municipality shared with provincial government	provincial government
monitor the quality and safety of the water supply	41	48	11
develop pipelines and regional water supply systems (water co-ops) to deliver an untreated water supply to individual rural residences	31	55	14
develop individual water supplies (e.g. well drilling, dugout construction, water hauling)	68	30	3
pump water from distant sources to dugouts during times of drought	41	50	9
who should be responsible, for small municipal systems, to:			
supply technical advice about facility operations, maintenance and monitoring	10	53	37
monitor the quality and safety of water	18	59	23
develop regional water supply systems	11	71	18

sample comments about the responsibility for safe drinking water ...

private systems

from community workshop discussions

- If you're drinking it, you should be responsible.
- Those on public systems pay dearly. I don't want any interference on private systems.
- It should be shared [responsibility]. I have no control over what's happening elsewhere in the aquifer...
- If one person is affected by drought, surely his neighbours are also affected. They should get together and share the cost.
- Municipalities and province are already involved [in emergency water pumping]. This is a shared responsibility that should continue.

from completed workbooks

- Depends upon who or what caused the shortage.
- What if someone dies from untreated water--who takes that responsibility?
- I believe every individual should be responsible for developing a working system for their farm or ranch. We do however need a clean water supply...
- Government must ensure that no one contaminates another person's water supply.
- Water supply expenses should be shared.

small municipal systems

from community workshop discussions	from completed workbooks
• Small communities cannot maintain provision of quality drinking water. They should have the same access as people in the city. • All of us are responsible to ensure that every Albertan has the benefit of the expertise required to supply safe water. • Regional systems are a good thing. The bigger the system, the more qualified the people you get to operate it.	• Provide training for operators of water systems. • Small municipalities should be responsible for the community water supply, but they should be monitored by the provincial government. • Large municipal systems got provincial monies and this should be shared with rural communities... • All water development for towns, villages and cities, including monitoring, should be a provincial responsibility.

reliable, quality water supplies for a sustainable economy

action is necessary to ensure reliable, quality water supplies

Workbook respondents indicated the extent to which they agreed or disagreed with a number of options that represent possible strategic choices for water management in the future. Wide-ranging opinions were received about these ideas with the overall response from both participants at community workshops and workbook respondents indicating a belief that the provincial government will have to consider changes to avoid future water supply and demand problems. Table 4 shows the percentage of workbook respondents who agreed or disagreed with the options for future action.

table 5

options for future action	% who Agreed or Strongly Agreed	% who Disagreed or Strongly Disagreed	% Unsure
determine groundwater availability throughout the province	74	12	14
allow water license transfers (i.e. an operator not using its full allocation may transfer a portion of that allocation to an operator, or municipality, that needs the water)	65	22	13
set aside water for future population growth before there are any shortages	65	18	17
encourage more efficient use of water through pricing to reduce overall use	60	27	13
investigate construction of storage reservoirs to capture water during high flow times, making it available during low flows for new operators	57	27	16
allocate water based on its most beneficial, or valued, uses	54	26	20
companies pay for and build their own water storage so they can "bank" water in high flow periods and use the water during low flow periods	46	33	21

table 5

options for future action	% who Agreed or Strongly Agreed	% who Disagreed or Strongly Disagreed	% Unsure
allocate all available water by "first in time/first in right" rule, then prohibit any further allocation of water in the basin	25	53	22
investigate construction of closed diversions from another river basin (water goes directly from one basin to an operator in another basin, but does not enter the river system)	24	56	20
investigate construction of open diversions from one river basin to another (water goes directly from one river into another)	17	70	12
allocate water to further uses even if this potentially harms aquatic environments	7	86	7

Discussion of these options at the community workshops illustrated that choices about strategies for the future will not be straightforward. People made very good points both supporting, and opposing, various strategies. The following describes the dialogue that occurred at the community workshops.

a) Should the provincial government continue to allocate all available water by "first in time/first in right" rule, OR allocate water based on its most beneficial, or valued, uses?

While not opposites, these two approaches define different philosophies to guide water allocation. Many participants pointed out that "first in time/first in right" (FITFIR) allocation has provided a predictable way to manage water allocations and has encouraged good water management among water license holders. Others were concerned that the way water is used does not affect priority in allocation, and that future beneficial water uses might not be possible, because existing water license holders have the majority of the water allocation.

While some people noted the importance of allocating water in priority to its most beneficial use, others were concerned about who would make the decision that any given use of water is better than another.

sample comments about methods of water allocation ...

from community workshop discussions	from completed workbooks
• [FITFIR] is the only way to preserve discipline in the allocation of water. Discipline provides for not over-allocating. Judging which is the most beneficial use is a sure way to discord. • Shouldn't we prioritize based on type of use? • [FITFIR] doesn't encourage effective, efficient use of the resource. • Who determines value? • "Most beneficial" and "valued" may be completely opposite (i.e. oilfield injection may be the most valued but not the most beneficial).	• [FITFIR] may not be a perfect solution in all circumstances, but adopting any other system amounts to an expropriation from those who have often paid and built lines around their rights to water. • Existing water rights of citizens cannot be taken away. Consider that additional demand may not make sense. • The first use may have little benefit and thus be inappropriate. • Allocation holders should be required to meet certain criteria or guidelines in order to maintain their allocation... • If "most beneficial" means highest dollar value–NO. • Who determines value?

b) Should the provincial government allow water license transfers?

Results from completed workbooks suggest that a majority of Albertans see water transfers as an effective tool for future water management. In the community workshops, the discussion was mixed. The major concern raised was that if water rights can be sold, it creates a situation where individuals could profit from a public resource. Many participants raised the concern that water transfers would allow the accumulation of water rights by wealthy companies and individuals, while less affluent players would eventually lose their water rights.

Others noted that water rights transfers are an incentive for water conservation because the potential to gain revenue from the transfer of water rights encourages efficient use of a water allocation. They also noted that with a "first in time" allocation system in place, water rights transfers provide a way for new players to access water in fully allocated basins.

sample comments about water license transfers ...

from community workshop discussions	from completed workbooks
• How can you collect money for something you didn't pay for? Water rights shouldn't be available for sale. • We're already doing this on a yearly or bi-yearly basis. It should be allowed. • We should avoid water becoming a commodity. You can currently sell the right to use water. This is more a short term pressure relief valve than a long term solution. • Agree [with transfers]...during a drought situation. But they should only be allowed on a need basis; they should be conditional.	• [Transfers are ok] with some restrictions–for example: should not be able to transfer water for a lower value and certainly not for non-renewable use. • Licensees received licenses at very little cost. If they are no longer using water, it should revert to the crown with no cost to the crown - use it or lose it - should not create profit for licensees. • Existing water licenses should be scrapped and a new allocation system created.

from community workshop discussions	from completed workbooks
• If there is a monetary value attached to a transfer, it's likely to create a situation where NAFTA might kick in and we lose our rights to our water.	• Water rights/permits should be a provincial resource much like oil and gas on private land. Private landowners with permits should not be able to make a profit from selling their permit at the expense of an entire community. • Paying for water makes it a commodity under NAFTA, the U.S. can then buy it.

c) Should the provincial government investigate construction of storage reservoirs?

Many respondents noted that reservoirs will be an essential part of water management in the future. They also noted that reservoirs could be thought of differently than they have been in the past. Some suggested several small reservoirs (perhaps located off the main stream flow), rather than major reservoirs such as those built in the 20th century.

Others felt that the mention of reservoirs was a "hidden agenda" and constituted an unannounced intention by the provincial government to construct more reservoirs. These people feared that reservoir construction will have negative impacts on the ecosystem and that large amounts of public money will subsidize the small number of people who would benefit. Construction of reservoirs by private companies was, however, less appealing to people.

sample comments about construction of storage reservoirs ...

from community workshop discussions	from completed workbooks
• "Investigate" is a key word. This has to be considered, but it may not necessarily be accepted (e.g. Meridian). • I wondered why this is just for "new operations"? It seems like a variation on everybody having a rain barrel: concept seems sound enough. • Storage off-stream is a very good idea.	• Go easy–the land loss may be more valuable than the water. • Take a look at the Oldman. Ecological damage–loss–evaporation. • ... how many people realize that before our dams and reservoirs, certain rivers, especially in the south, went completely dry in some of the driest seasons...dams and reservoirs already do a great deal to preserve aquatic life.

d) should the provincial government investigate diversions of water from one basin to another?

Many respondents were highly concerned about the possibility of inter-basin transfers in any form.

Key reasons for opposition included the following concerns:

- such diversions will open the door to transfers to the U.S. or other countries
- such diversions will cause ecological damage
- the cost to taxpayers will greatly outweigh the benefits
- a large southern population will dictate its water needs to a much smaller northern population
- flexibility for future allocation in some basins will be given away in favour of subsidizing over-allocation in other basins.

sample comments about diversions of water ...

from community workshop discussions	from completed workbooks
• Maybe other things should be investigated first. We're not short of water in the S. Saskatchewan River but it could be managed better ... • I'm very much against. However, if the majority of people in Alberta agree to divert water, it will probably happen (because there are more people in the south). • The Americans will be standing in line. This would fall under NAFTA. Don't open Pandora's Box. • Key word is "investigate." If you don't want to investigate, are you afraid of the answers? • Investigating would be the first step down a slippery slope. What's the point in studying it if you're not planning to do it?	• Must be prepared to look at individual and special cases for inter-basin transfers (i.e. regional water systems). • I don't believe inter-basin transfer of water is wise. It would be extremely costly and do great damage to the total environment. • Diverting water will not solve issues in the long run. Conservation and "best practices" is the key.

e) should the provincial government encourage more efficient use of water?

In general, respondents think we use water inefficiently in Alberta and we must improve. However, some people worried that efficiency improvements would merely encourage us to find more ways to use water. In the community workshops, some participants noted that greater effort should be made to learn technologies and methods from around the world (Australia, Europe and Israel were mentioned).

Others noted that we should focus on technology changes in the sectors that use the most water, in order to reap the greatest benefit from improvements. Still others felt that every opportunity to install better technologies and efficiencies (e.g. shower heads or pipe connections in homes) should be taken. Some worried that agriculture or industry would be asked to make expensive changes without any help from others who would also benefit.

sample comments about more efficient use of water ...

from community workshop discussions	from completed workbooks
• Better to encourage reduced use through education and incentives. • Look at how water will be used (consumptive vs. non-consumptive use (e.g. use sewage water for cooling towers). • There are other ways of ensuring efficiency besides pricing. The government has a great power to regulate.	• People will consume less water if it's metered. • Spend some time and money on alternate methods for industrial use. • May be more efficient methods to get equivalent results. • Introduce incentives for more water efficient operations. • Eliminate declining rate structure to encourage conservation by high volume users.

f) should the provincial government determine groundwater availability?

Both community workshop participants and workbook respondents felt that a groundwater inventory is very important so that groundwater resources can be properly managed. During workshop discussions, a number of participants thought that Alberta already had an adequate inventory of groundwater. However, they were informed by department representatives that the inventory is lacking information about many areas of Alberta, and that even the available information is out of date.

sample comments about determining groundwater availability ...

from community workshop discussions	from completed workbooks
• This is a very expensive proposition. Just to determine the reserve would be cost prohibitive. • Definitely in agreement. How can you make decisions without knowing? • Is the technology even available that allows us to determine the amount of water underground? • Believe there is potential to start looking at groundwater.	• [This could] take the pressure off river use. • If you don't know what you have, how do you know where you're going? • [Can't we use] shared information with industry (i.e. seismic, Alberta Geological Survey?).

g) should the provincial government further allocate water even if this potentially harms aquatic environments?

A very strong majority of participants disagreed. In the community workshops, participants consistently noted the importance of protecting aquatic environments. The strong support for protecting aquatic environments is discussed on page 18 (see "safeguarding alberta's healthy ecosystems").

sample comments about potential harm to aquatic environments ...

from community workshop discussions	from completed workbooks
• There is a lack of knowledge about this ... most of us agree that we shouldn't allocate if it potentially harms aquatic environments. • ... we need to recognize that you cannot build a sustainable economy if you destroy the environment. • Methodologies available to determine minimum flow to maintain healthy ecosystems. Make this a priority and follow recommendations.	• Aquatic preservation should be the number one over-riding criteria. • It is far cheaper to sustain existing, healthy ecosystems than try to "fix" them later. • Economic development cannot take precedence over environmental concerns.

water conservation

action is necessary to improve water conservation

Participants feel that improved water conservation is essential and strongly supported the options to educate Albertans about water conservation values and methods, to use best management practices for various sectors, and to have the government offer tax incentives (e.g. rebates) for water conservation. Suggestions about using pricing as an incentive for water conservation received a mixed response–especially for pricing of household water. Some participants at community workshops felt that pricing of water was a hidden form of tax.

Participants at community workshops indicated that agriculture and industry (combined in a pricing option in the workbook) need to be considered separately. Some felt that pricing water for industry would be passed on to consumers whereas this was not as easily done in agricultural operations. They also felt that agriculture and industry use water quite differently. Still others noted that price additions in Alberta could affect the competitiveness of both agriculture and industry. Nevertheless, the option to price water used by industrial and agricultural operations as an option for conserving water did receive support from a majority of workbook respondents.

table 6

options for conserving water	% who Agreed or Strongly Agreed	% who Disagreed or Strongly Disagreed	% Unsure
educate Albertans about water conservation values and methods	96	2	2
set targets for water conservation for various sectors using best management practices	79	7	14
establish water conservation incentives (e.g. tax rebates) offered by government	68	17	15
establish a price for water used by industrial and agricultural operations	68	22	10
establish a price for water used by individual households	50	36	14

The **telephone survey** asked respondents to indicate their level of agreement with the following statement: **The Province should explore ways to increase water conservation, even if this increases costs to the person using the water.** Eighty-three per cent **(83%) of respondents agreed or strongly agreed** with the statement.

sample comments about more efficient use of water ...

from community workshop discussions

- Education is the key. Start with children in classrooms.
- Government should provide incentives and encourage the use of devices that save water.
- Put a price on water and the revenue could go into conservation research, industry incentives, salinization issues and revisiting older industries who were approved when standards were lower.
- The fear of pricing water is that we come under international law and there will be great pressure to export our water.
- Have to differentiate between urban and rural household use.
- Rebates (such as the one from natural gas) should be used to encourage people to look at ways to conserve water use.

from completed workbooks

- Use all available technologies to reduce water wastage and provide incentives to upgrade wasteful practices and equipment.
- Establish a minimum usage of water free of charge, anything over a certain amount, charge a fee based on actual usage for agriculture, household and industrial.
- Work with irrigationists to improve conservation efficiency and productivity in their use of water.
- All water should have the same value - no industrial vs. consumer rate.
- Pricing, while undesirable, may be the only way that conservation of water resources may be embraced.

action is necessary to safeguard alberta's ecosystems

Both those who responded to the workbook and to the telephone survey strongly agree that it is necessary to safeguard aquatic environments in Alberta. The following table illustrates the high level of agreement with the strategic options that describe possible ways to improve protection of aquatic ecosystems.

table 7

options for protecting aquatic ecosystems	% who Agreed or Strongly Agreed	% who Disagreed or Strongly Disagreed	% Unsure
develop water management plans that integrate protection of aquatic ecosystems with watershed and land use management	93	2	5
identify sensitive aquatic environments or habitats that require additional protection	92	3	5
determine how much water the aquatic environment requires to remain healthy	90	3	7
determine the maximum amount of substances (e.g. phosphates) a river or lake can accept without causing harm	88	6	6
determine the balance between the amount of water needed for the aquatic environment and the amount needed for economic growth within a water basin	82	8	10
maintain an amount of water in aquatic environments that will protect ecosystems even though it may limit human use	81	9	10

The **telephone survey** asked respondents to indicate their level of agreement with the following statement: **If there are water shortages in the future, the Province should put a higher priority on preserving natural aquatic environments, even if this limits economic growth and jobs.** Eighty-seven per cent **(87%) of respondents agreed or strongly agreed** with the statement.

sample comments about safeguarding alberta's healthy ecosystems ...

from community workshop discussions	from completed workbooks
• We've talked about costs [of technology changes], but these technologies are already in high demand around the world. The initial cost may be high but advancements on that technology can be sold...	• This is not really an option. We may prefer, but we do not need, economic growth and we simply cannot have it without first having a sound aquatic environment.
• I'm concerned with the lack of integration between land use planning and water management. Why was the wetland policy shelved?	• We should avoid the approach of trying to discover the maximum permittable (sic) pollution our land and air can accommodate. Instead we should work on handling our needs in the best possible and practical way.
• The term "healthy" is a tricky one. A subjective word.	• We must remember that humans are part of the ecosystem...and that we have needs too. There is a difference between the value of human life and other forms of life.
• Local residents are usually best at identifying where the problems are. Best to have them work together–not "top down.	• There is no mention of wastewater. There should be a wastewater management plan for all areas. Increase the technology so that effluent goes back without additives and nutrients.

conclusion

Albertans have made it clear that water management is important. They have expressed their belief that the provincial government must address their concerns about water, and must consider how to address the challenges listed on page 5 of this document.

Thank you to the many Albertans who took the time to provide their advice.